

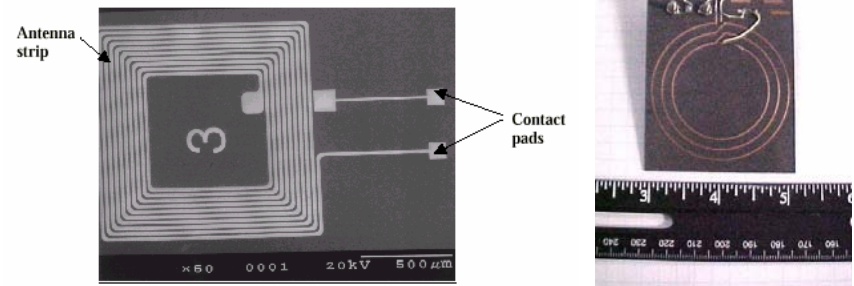
# Radio Frequency (RF) Telemetry for Bioelectromechanical Systems (BioMEMS) Sensors and Actuators

*The Cleveland Clinic Foundation*



## TECHNOLOGY

This effort leverages GRC Radio Frequency (RF) technology to develop novel miniature conformal antennas and signal processing circuits for RF telemetry to and from biomicroelectromechanical systems (BioMEMS) sensors and actuators through electromagnetic coupling.



Micro inductor/antenna circuit intended for integration with MEMS Pressure Sensor\*

3-Turn Microstrip Receive Antenna

## COMMERCIAL APPLICATION

- ◆ Wireless and ambulatory monitoring of healing and/or trauma in patients (e.g., hospitals, nursing homes)

## SOCIAL / ECONOMIC BENEFIT

- ◆ Foster the creation of start-up and spin-off businesses in northeast Ohio (i.e., more tax revenue for the state of Ohio)
- ◆ Bring technological expertise into Ohio
- ◆ Provide incentive for engineering graduates from local universities to remain in Ohio.
- ◆ Pre-clinical efficacy demonstration will generate new patent filings and investment from medical devices companies/venture capitalists.

## NASA APPLICATIONS

- ◆ Health monitoring device with potential use in International Space Station (ISS) and Crew.
- ◆ This technology supports projects related to exploration and development of space.
- ◆ Solidify GRC position as a player in biomedical technologies with relevance to GRC and NASA mission, and to the greater Cleveland area.
- ◆ Consistent with newly created NASA Mission Directorates (e.g., Exploration Systems and Space Operations Mission Directorates).
- ◆ Radio Frequency Telemetry System for Sensors and Actuators; US patent No. 6,667,725 B1